

REMARKS

The enclosed is responsive to the Examiner's Office Action mailed on September 29, 2006. At the time the Examiner mailed the Office Action claims 1-24 were pending. By way of the present response the Applicants have: 1) amended claims 1, 11, and 17; 2) added no new claims; and 3) canceled no claims. As such, claims 1-24 are now pending. The Applicant respectfully requests reconsideration of the present application and the allowance of all claims now presented.

35 USC §102 Rejections

Claims 1-24 are rejected under 35 U.S.C. 102(e) as being anticipated by North, et al, U.S. No. 6,754,784 (hereinafter "North").

For a 35 U.S.C. §102 reference to anticipate a claim, the reference must teach every element of the claim. Section 2131 of the MPEP recites: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

With respect to independent claim 1, Applicants teach and claim: "A memory management unit configured to receive a virtual address and provide a corresponding physical address, the memory management unit comprising: a storage containing one or more virtual address-to-physical address translations; conversion logic to generate a modified virtual address from the virtual address if a virtual address-to-physical address translation for the virtual address does not exist in the storage; and a page table walk unit configured to convert the modified virtual address into the corresponding physical address."

North teaches that a memory management unit (104) includes a translation look aside buffer (TLB), access control logic, and translation table walking logic. (Fig. 1A, Col. 3, lines 48-50) The examiner has asserted that the access control logic of North is the same as the conversion logic taught and claimed by Applicant. However, the access control logic of North does not serve the same function as the conversion logic claimed by Applicant. North's access control logic determines whether access to a physical address in memory is permitted after a virtual address has been translated to a physical address by the TLB. (Col. 3, lines 53-57)

North does not teach that the MMU includes logic to generate a modified virtual address from a virtual address if no translation exists in a storage. North teaches that a co-processor translates virtual addresses issued by a CPU into modified virtual addresses (MVA), and that these modified virtual addresses are provided to the instruction MMU and data MMU, respectively. (Fig. 3, Col. 12, lines 26-34, Col. 17, lines 32-37) The MMU of North does not need to generate a MVA, because the MVA is provided to the MMU.

Thus, North does not disclose an MMU including "conversion logic to generate a modified virtual address from the virtual address if a virtual address-to-physical address translation for the virtual address does not exist in the storage." Therefore, North does not disclose each and every element of claim 1.

Pending independent claims 11 and 17 recite limitations that are similar to the limitations of claim 1, although some differences may exist among the limitations of the other pending independent claims. These similar limitations nevertheless patentably distinguish claims 11 and 17 over North. Therefore, for at least these reasons, Applicant respectfully submits that North does not anticipate all elements of independent claims 1, 11, and 17 and these claims are in condition for allowance.

Claims 2-10, 12-16, and 18-24 are dependent on independent claims 1, 11, and 17, respectively. Thus, for at least the same reasons advanced above with respect to independent claims 1, 11 and 17, Applicants respectfully submit that North does not anticipate all elements of dependent claims 2-10, 12-16, and 18-24 and these claims are in condition for allowance.

CONCLUSION

Applicant respectfully submits that all rejections have been overcome and that all pending claims are in condition for allowance.

If there are any additional charges, please charge them to our Deposit Account Number 02-2666. If a telephone conference would facilitate the prosecution of this application, the Examiner is invited to contact Cyndi M. Wheeler at (916) 356-5358.

Respectfully Submitted,
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